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RATE ADJUSTMENT DUE TO EXTRAORDINARY OR EXCEPTIONAL CIRCUMSTANCES

Docket No. R2013-11

RESPONSES OF THE UNITED STATES POSTAL SERVICE TO QUESTIONS 3-14 OF PRESIDING OFFICER'S INFORMATION REQUEST NO. 7
(November 15, 2013)

The United States Postal Service hereby provides its responses to Questions 3-14 of Presiding Officer's Information Request No. 7, dated November 8, 2013. Answers to Questions 1 and 2 were filed on November 12, 2013. Each question is stated verbatim and is followed by the response. The responses to Questions 3(a-d), 4(b), and 5-14 are sponsored by Thomas Thress; the response to Question 3(e) is sponsored by Stephen Nickerson; and the response to Question 4(a) is an institutional response of the Postal Service.

Respectfully submitted,

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3. On page 10 of Mr. Nickerson's statement, he says: "It is also extremely likely that mail volumes will continue to decline beyond 2014. First-Class Mail volumes have decreased every year since 2001, and there is no reason to believe this trend will change."

a. How much of the decrease in the volume of First-Class Mail from 2001 to 2007 was due to the Great Recession?

b. Please refer to Attachment 15 to the Nickerson statement. How much of the 4.1 billion decline in volume from the 2013 Forecast to the 2014 After Rates Forecast (Jan 26, 2014) would you consider to be due to the Great Recession?

c. If the declining trend in First-Class Mail volume continues beyond 2014, as the Nickerson statement surmises, will any of that further decline in the volume of First-Class Mail be due to the Great Recession?

d. Is it fair to interpret the quoted statement in the preamble to this question as saying that the decline in First-Class Mail volume is unlikely to return to prior levels even when the economy improves because the decline in volume reflects an irreversible trend resulting from diversion of mail to alternatives such as the Internet, pay-by-phone, vote-by-phone for stockholder elections, etc.? If that is not a reasonable interpretation, please explain what was meant by the above-quoted statement.

e. The 4.1 billion decline in volume from 2012 to the 2014 After Rates Forecast (Jan 26, 2014) reflects an average decline of about 2 percent per year. If the volume of mail continues to decline at that pace, is that likely to create a recurring liquidity problem even if the exigent price increase is approved, or can the Postal Service reasonably expect to continue to adjust its labor force and cost structure to accommodate such a decline in mail volume?

RESPONSE

a. None of the decrease in the volume of First-Class Mail from 2001 to 2007 was attributed to the Great Recession in this case.

b. The observed 4.1 billion piece difference shown in Attachment 15 reflects the net effect of both positive and negative influences on mail volume. As shown in the materials filed in my response to POIR No. 6, Question 14, the effects of the Great Recession constitute negative effects that reduce the 2014 forecasts, relative to the 2013 forecast, by approximately 5.1 billion pieces.

c. If the negative trends which have emerged because of the Great Recession persist, the impact of these trends could reasonably be attributed to the Great Recession. Even if these trends subside, however, pre-existing diversion is expected to continue to reduce First-Class Mail volume by 1.5 to 1.8 billion pieces per year if those trends continue at their historical pre-recession rate.

d. I agree that the decline in First-Class Mail volume is likely to continue. First-Class Mail volumes are highly unlikely to return to previous levels as it is my belief that the majority of this mail that has been lost is likely to remain so, especially mail that has been lost to the Internet and electronic alternatives. The rate of decline in First-Class Mail could diminish, however, if negative macro-economic trends that have emerged since the Great Recession (e.g., number of credit cards, rate of household formation) return to pre-recession levels, or if the rate of diversion to Internet or electronic alternatives begins to attenuate as the market penetration of these alternatives nears their long-run plateau levels. The attenuation of the rate of mail diversion seems likely to happen eventually, although it is unclear how soon this might happen or how close to 100 percent mail diversion these alternatives may eventually achieve. Please see my responses to POIR No. 3, Question 1, and POIR No. 6, Question 25, for some further discussion of the negative trends that are currently affecting First-Class Mail and the expected path of Internet and electronic diversion.

e. Answered by Steve Nickerson.

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4. For the five Standard Mail products listed below, the FY 2009 and FY 2010 Revenue, Pieces, and Weight System (RPW) Reports posted on the Postal Service's web site show different volume figures for FY 2009. (In the FY 2010 RPW Report, the volume data for FY 2009 appear in the column for the preceding year.)

	(1) As shown in FY 2009 RPW (000's)	(2) As shown in FY 2010 RPW (000's)
HD & Sat. Letters	5,085,381	4,995,529
HD & Sat. Flats	12,356,828	11,801,047
Carrier Route	9,856,763	9,953,347
Letters	46,559,408	46,800,733
Flats	7,793,175	7,837,100

a. Please explain the discrepancy between columns 1 and 2, and state which are the correct volume data for FY 2009.

b. For FY 2009, please explain which of the above volume data were used by witness Thress for his analysis of Standard Mail.

RESPONSE

a. Answered by the United States Postal Service.

b. Column (2)

5. Please refer to the results for Standard Mail shown in the spreadsheet "Exigent Impact" contained in Library Reference USPS-R2010-4R-10, and also to the Response to POIR No. 3, question 1 by witness Thress, where he states that: "Instead of using direct measures of Internet usage – which would lead to an inevitable expectation that the rate of Internet diversion should attenuate over time as Internet usage levels attenuate toward the stable long-run levels typical of a mature market – the apparent ongoing diversion of mail to the Internet (and elsewhere) *is now modeled through simple linear trends*. To the extent that there is evidence that the rate of diversion may be changing over time, the *magnitude of these trends is allowed to change* over time within the Postal Service's econometric demand equations. (emphasis added).

a. For the time period covered by the analysis which underlies the results reported in the spreadsheet "Exigent Impact" contained in Library Reference USPS-R2010-4R-10 for Standard Mail, how many different trends (or trend variables) does the model explicitly contain, (i.e., the column headed "Trends" is plural; do the data reported in this column subsume more than one trend)?

b. For each trend (or trend variable) applicable to Standard Mail, please "mov[e] outside the econometric model[]" (see, e.g., response to POIR No.3, question 1) and explain the underlying factors that are (or are thought to be) driving these trends (e.g., bankruptcy and disappearance of through-the-mail merchants, diversion to electronic media for shopping or payment purposes, etc.) and provide the economic rationale for including those trends in the model.

c. Does the model used to generate the results for Standard Mail shown in the "Exigent Impact" spreadsheet contain any trends (or trend variables) that are applicable to only one of the individual products within Standard Mail? If so, please indicate the variable to which the trend applies and explain the period covered by such trend and the rationale for inclusion of any such single product trend or trend variable.

d. Does the model used to generate the results for Standard Mail shown in the "Exigent Impact" spreadsheet contain any trends (or trend variables) that are applicable only to a subgroup of products within Standard Mail, e.g., Enhanced Carrier Route (ECR), or Regular, or just flats, or just letters? If so, please indicate the subgroup of products to which the trend variable(s) pertain, and explain the rationale for inclusion of any such trend(s).

RESPONSE

a. Each of the demand equations which I estimate for the four separate subclasses of Standard Mail (Regular, ECR, Nonprofit, and Nonprofit ECR) contains a full-sample time trend (called TREND in the econometric output provided in this case). The impact of each of these variables is included in column H of sheet 'Volume' of ExigentImpact.xlsx, headed "Trends".

b. The "rationale for including those trends in the model" is more mathematical than "economic": specifically, these trend variables have significant coefficients (t-statistics of 18.15, −4.95, −7.41, and −4.40, respectively) which improve the statistical fit of these equations.

The trend variables in the Standard ECR, Nonprofit, and Nonprofit ECR equations have (significant) negative coefficients, while the trend variable in the Standard Regular equation has a (significant) positive coefficient. The net effect of these four trend variables on total Standard Mail volume is positive and appears to be picking up longer-run historical general trends in the total U.S. advertising market as well as direct mail's share within the U.S. advertising market. See, for example, my discussion of this topic in POIR No. 1, question 4; POIR No. 3, questions 1 and 2; and POIR No. 6, questions 19 and 20.

The individual subclass-level trends reflect specific trends affecting these specific types of mail within the overall direct mail advertising industry. For example, the negative trend in Standard ECR mail vis-à-vis the positive trend in Standard Regular mail reflects shifts away from broad-based demographic (e.g., neighborhood) targeting and toward individual consumer-based targeting based on either the specific demographic profiles of individual consumers or trends toward targeting based on past purchasing patterns of specific individuals.

The negative trends in the Standard Nonprofit and Nonprofit ECR demand equations appear to reflect trends away from the use of direct mail advertising by not-for-profits. As one example of the latter, not-for-profits appear to have exhibited a long-run trend toward online solicitation which pre-dates the Great Recession. Trends toward Internet advertising may also play some role in the negative trend in the Standard ECR equation.

c. – d. Please see my response to a. I have only estimated econometric equations for Standard Mail at the subclass level for Standard Mail. For subgroups within a single subclass (e.g., Letters vs. Flats), any differences in trends would show up in column R of sheet 'Volume' of ExigentImpact.xlsx, headed "Other". Looking at this column for Standard Regular letters and flats, for example, there is an apparent positive trend in Standard Regular letters (the impact of "Other" is positive for 8 of the 11 years shown in ExigentImpact.xlsx with an average value of +800 million pieces per year) offset by apparent negative trends in Standard Regular Flats (average annual value for "Other" of approximately -786 million pieces) and Standard Regular Other (average annual value for "Other" of approximately -13 million pieces since FY 2009). These historical trends within the Standard Regular subclass (toward Letters and away from Flats and NFMs) are incorporated into the Postal Service's volume forecasting model.

6. In response to POIR No. 2, question 8, witness Thress states that "[h]istorical trends are projected to continue forward at the same rate because I have no reason to assume that they will not." That is, trends generally are considered to remain in effect until they are deemed either to have changed or, perhaps, no longer be applicable.

a. Were any of the separate trends used to model Standard Mail deemed to have "expired," or otherwise are no longer in effect at the end of 2011? If so, please explain why they were deemed to be no longer applicable, and explain whether one or more new trend variable(s) was added to the model to replace any trend variable after it was discontinued and no longer had any effect.

b. Please explain the criteria used to determine whether any trend(s) or trend variable(s) robust to the model in 2002 were deemed no longer applicable by 2012.

RESPONSE

a. – b. The full-sample time trend in the Standard Regular demand equation is truncated starting in 2007Q1. This is represented on sheet 'Volume' of ExigentImpact.xlsx by including the impact of the time trend as if it was operational for the full sample period in column H (headed "Trends") but adding an offsetting negative trend starting in 2007Q1 in column W (headed "Rec/Diversion").

Experimentation into whether the full-sample time trend in the Standard Regular demand equation was still applicable began in earnest during FY 2012. The demand equation for Standard Regular mail that was filed with the Postal Regulatory Commission on January 20, 2012, included the non-linear intervention variable starting in 2008Q2 that is still present in the Standard Regular demand equation in this case, but included no other factors associated with the Great Recession (outside of real gross private domestic investment).

The Recursive Residuals associated with this equation (which are reproduced below) suggested that actual Standard Regular Mail volume was weaker than the model would have predicted just before and after the period over which the non-linear Intervention variable was strongest.

Recursive Residuals
(normalized: (Ln(Actual) - Ln(Forecast)) / SE

	Quarter 1	Quarter 2	Quarter 3	Quarter 4
2006	-1.142	-0.796	-0.965	0.051
2007	0.594	-1.475	-1.480	1.564
2008	-0.293	-3.226	-0.671	2.306
2009	-0.317	-2.811	-1.400	0.010
2010	2.137	0.498	-0.296	1.627
2011	1.795	-1.410	-1.189	-0.799

The Recursive Residuals for the last three quarters of FY 2011 suggested, perhaps, that, even setting aside the 20 percent volume decline being explained by the non-linear Intervention variable, Standard Mail volume growth might not return to pre-recession levels when the macro-economy returned to something approaching normal growth rates.

The pre-intervention time period also suggested that perhaps Standard Regular mail volume had begun to slow down by 2006 or 2007, perhaps due to weakness in the overall advertising industry (whose share of GDP declined in both 2006 and 2007 from historical norms) or to specific industries which were heavy users of direct-mail advertising (e.g., the financial industry) due to the factors which ultimately led to the Great Recession (e.g., housing prices peaked in 2006).

The possibility that Standard Regular Mail volume was unlikely to return to historical growth rates took on heightened intensity in FY 2012, when Standard Regular Mail volume declined by 9.2 percent.

In the demand equation filed with the Postal Regulatory Commission on January 22, 2013, two trends had been added to the Standard Regular demand equation, starting in 2006Q1 and 2012Q3. With the introduction of data from the first three quarters of FY 2013, it has become apparent that the decline in Standard Regular Mail volume in FY 2012 was not a new trend, but appears to have instead been a level shift. That said, it has become even more apparent that the long-run positive trend in Standard Regular Mail no longer exists. Further experimentation indicated that the best possible means of modeling this was to truncate the full-sample time trend starting in 2007Q1, which has, therefore, been done in this case.

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7. For the various Standard Mail products shown in the spreadsheet "Exigent Impact" contained in Library Reference USPS-R2010-4R-10, two separate columns show the change in mail volume attributed, respectively, to (i) Nominal Price, and (ii) Inflation. With respect to the magnitudes of volume change shown in these two columns:

a. Are the elasticities for Standard Mail submitted annually to the Commission applicable to nominal or real (i.e., inflation-adjusted) price changes?

b. To what extent do the changes in volume attributed to these two factors, either separately or jointly, reflect the annual estimated elasticities for the products within Standard Mail? That is, to what extent do the magnitudes of the estimated changes in volume attributed to "Nominal Price" and "Inflation" conform with and support the elasticity estimates submitted annually to the Commission for the products in Standard Mail?

c. Do the years shown in the "Exigent Impact" spreadsheet pertain to calendar or fiscal years?

RESPONSE

a. The Postal Service's econometric demand equations are estimated using real Postal prices as an explanatory variable.

b. Columns I and J of sheet 'Volume' of ExigentImpact.xlsx, headed "Impact of Price Elasticity" and "Inflation", respectively, measure the impact of changes to Postal prices as measured by the Postal Service's econometric own-price elasticities. The impact of changes to nominal Postal prices are quantified in column I ("Impact of Price Elasticity") while changes to real Postal prices resulting from changes in inflation (as measured by the Consumer Price Index) are quantified in column J ("Inflation").

c. Fiscal Years.

8. Please refer to the Standard Mail products shown in the spreadsheet "Exigent Impact contained in Library Reference USPS-R2010-4R-10. In the context of annual data, how should one interpret the reported volume changes due to "Seasonality," i.e., to what "season" do these annual changes in volume pertain?

RESPONSE

Volume changes attributable to "Seasonality" in ExigentImpact.xlsx (column Q), which are generally fairly small, quantify the impact on Standard Mail volumes of the seasonal variables that are included in the Postal Service's econometric demand equations as well as changes to the number of Postal delivery days between years (e.g., the impact of Leap Years). The seasonal variables included in the Postal Service's econometric models in this case include variables which model the impact on mail volume of the number of Saturdays or Sundays within a particular quarter. These values can change from year to year and may affect mail volumes at an annual level.

9. Please refer to the Standard Mail products shown in the spreadsheet "Exigent Impact" contained in Library Reference USPS-R2010-4R-10. Under Standard Flats, under the column marked "Rate Change," entries for the years 2007 and 2008 are, respectively, 144.993 and 221.554. Please interpret and explain these two positive entries. Specifically, what "Rate Change" caused an increase in the volume of Standard Flats in those two years (and in no other years)?

RESPONSE

The specific cell references cited here are a by-product of performing the Sources-of-Change analysis at a finer level of detail than I estimate econometric demand equations.

The volume shown in column M of sheet 'Volume' of ExigentImpact.xlsx in FY 2007 and FY 2008 associated with Standard Regular Mail (Letters, rows 101 and 102; Flats, rows 114 and 115; and Other, rows 127 and 128) measure the impact of the dummy variable associated with the implementation of R2006-1 rates in May, 2007 which is included in the Standard Regular demand equation used in this case (the variable name is D_R07).

The reason why this variable was included in the Standard Regular demand equation was primarily because R2006-1 eliminated Automation letters discounts for Standard ECR mail, thereby making it cheaper for such mail to be mailed as Standard Regular Automation 5-digit letters. The combined impact of column M of sheet 'Volume' of ExigentImpact.xlsx across all Standard Regular Mail was to increase Standard Regular Mail volume by 1.857 billion pieces of mail by the end of FY 2008. Standard ECR Automation letters volume in the four quarters before the implementation of R2006-1 (2006PQ3 through 2007PQ2) totaled 1.781 billion pieces, suggesting that the R2006-1 dummy variable in the Standard Regular demand equation does an excellent job of picking up this impact.

But, most likely, Standard ECR Automation letters that shifted into the Standard Regular subclass at this time became Standard Regular Letters. It could perhaps be preferable, therefore, to zero out these values for Standard Regular Flats and Other and move those volumes to Standard Regular Letters. The values in column R of sheet 'Volume' of ExigentImpact.xlsx (headed "Other") would then adjust to compensate. Shifting these effects between the sub-categories of Standard Regular Mail in this way would only affect the results presented in columns M and R of sheet 'Volume' of ExigentImpact.xlsx, and would have no effect on the estimated impact of the Great Recession on Standard Mail volume presented in this case.

10. The following questions pertain to the spreadsheet "Exigent Impact" contained in Library Reference USPS-R2010-4R-10, and the section headed "Standard Regular Flats."

a. For the years 2008 and 2009, the estimated volume change due to "Impact of Price Elasticity" were, respectively, -657.745 and -66.739, for a combined two year negative impact of -724.484. For those same years, the estimated impact of Inflation on volume was +171.209 and +40.838, for a combined positive impact of +212.047. Would it be reasonable to say that for these two years the estimated net impact of inflation-adjusted price change on volume of Standard Regular Flats was -512.437? If this is not a reasonable interpretation of the data, please provide the best estimate for the impact of inflation-adjusted price change on the volume of Standard Regular Flats for the years 2008 and 2009 and explain how such an estimate is derived.

b. For the years 2008 and 2009, the volume change of Standard Regular Flats due to "Total Macro" were, respectively, -952.666 and -1,809.769, for a combined two-year negative impact of -2,762.430. For those two years, would it be reasonable to say that the Total Macro impact on of Standard Regular Flats exceeded by more than five times the impact of inflation-adjusted price changes -512.437. i.e., during the two years in question, the estimated impact of price changes on the volume of Standard Regular Flats appears to have been relatively minor in comparison with the impact of macro-economic factors and the Great Recession. If this is not a reasonable interpretation of the data discussed here, please provide the correct estimate for the impact Total Macro versus real price changes on the volume of Standard Regular Flats for the two years in question.

c. For the years 2008 and 2009, the column marked "Other" contains, respectively, the following entries: -1,843.546 and -366.176. Please explain the underlying factors thought to be driving these two entries.

RESPONSE

a. Yes, but see also my response to part c. below for a further discussion of additional price-related declines in Standard Regular Flats volume that are included in column R (headed "Other") of sheet 'Volume' of ExigentImpact.xlsx.

b. Yes, but see also my response to part c. below for a further discussion of additional price-related declines in Standard Regular Flats volume that are included in column R (headed "Other") of sheet 'Volume' of ExigentImpact.xlsx.

c. As noted in my response to Question 5.c-d. of this POIR, there has been a general negative trend in Standard Regular Flats relative to Standard Regular Letters that has been ongoing for several years and can be seen by comparing the values in column R (headed "Other") of sheet 'Volume' of ExigentImpact.xlsx associated with these two categories. For example, from 2002 – 2006, the average impact of "Other" factors on Standard Regular Letters (rows 96 through 100) was approximately 714 million pieces per year, while the average impact of "Other" factors on Standard Regular Flats over the same time period (rows 109 through 113) was -811 million pieces per year.

These pre-existing trends could, therefore, account for perhaps as many as 1.4 to 1.6 billion of the 2.2 billion decline in Standard Regular Flats in FY 2008 and FY 2009 attributed to "Other".

As noted in my response to Question 9 of this POIR, the positive impact of "Rate Change Dummy Variables" (column M) on Standard Regular Flats could be attributed instead to Standard Regular Letters. Removing this positive influence in FY 2008 would lead to an offsetting reduction in the negative influence of "Other" factors that year of 221.554 million pieces.

The remaining "Other" factor that affected Standard Regular Flats volume in FY 2008 (of perhaps as much as 800 million pieces in that year) was most likely due to the migration of some Standard Regular mail from flats to letters in response to R2006-1 rates which went into effect in May, 2007 (so that FY 2008 was the first full year in which these rates were in effect).

In R2006-1, Standard Flats rates were raised by an average of twenty percent while Standard letter rates were raised less than two percent. One outcome of this was probably that some flats mailers modified their mailings and started sending them as letters instead of flats. The large negative "Other" figures associated with Standard Regular Flats in FY 2007 and FY 2008 are largely offset by similarly large positive "Other" figures for Standard Regular Letters. Much of this is because of the long-standing differences in trends noted above, but specific to FY 2007 and FY 2008, this is also almost certainly picking up some migration of Standard Regular mail from flats to letters in response to R2006-1 rates.

11. The following questions pertain to the spreadsheet "Exigent Impact" contained in Library Reference USPS-R2010-4R-10, the section headed Standard ECR Basic and Standard NP ECR Basic.

a. Do the volume data shown under "Standard ECR Basic" and "Standard NP ECR Basic" coincide with volume data reported for the "Carrier Route" product contained in the RPW and Cost and Revenue Analysis Reports? If not, please explain all differences.

b. Under Standard ECR Basic, for the years 2008 and 2009 the volume change due to "Impact of Price Elasticity" were, respectively, -898.420 and -581.866, for a two-year combined estimated negative impact on volume of -1,480.285. For those same years, the impact of Inflation was +360.729 and +203.229, for a combined estimated positive impact on volume of +563.958. Would it be reasonable to say that for these two years the estimated net impact of inflation-adjusted price change on the volume of Standard ECR Basic was -916.327? If this is not a reasonable interpretation, please provide the best estimate for the impact of inflation-adjusted price change on the volume of Standard ECR Basic for 2008 and 2009.

c. Under Standard ECR Basic, for the years 2008 and 2009, the volume change due to "Total Macro" were, respectively, -376.002 and -1,312.280 for a combined negative impact of -1,688.283. For those two years, would it be reasonable to say that the Total Macro impact on Standard ECR Basic exceeded by about 1.8 times the impact of inflation-adjusted price changes? If this is not a reasonable interpretation, please provide the correct estimate for the impact Total Macro versus inflation-adjusted price changes on the volume of Standard ECR Basic for the two years in question.

d. Under Standard ECR Basic, for the years 2008 and 2009 the column marked "Other" contains, respectively, the following entries: -1,148.192 and -332.140. Please explain the underlying factors thought to be driving these two entries.

<u>RESPONSE</u>

a. Yes.

b. Yes. Additional declines in Standard ECR Basic mail related to the shifting of mail from Standard ECR Basic to Standard Regular Mail as a result of the implementation of R2006-1 rates are identified in columns R ("Other") and X ("Rate Case Intervention") of sheet 'Volume' of ExigentImpact.xlsx. Please see my response to part d. of this question.

c. Yes. But please also see my response to part d. of this question.

d. The column marked "Other" for Standard ECR Basic for FY 2009 in ExigentImpact.xlsx (sheet 'Volume', cell R142) shows a value of +332.140. My answer here therefore focuses solely on FY 2008.

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As I discussed in my responses to Question 9 of this POIR, automation letter discounts were eliminated for Standard ECR mail, which led this mail to shift to Standard Regular letters where automation discounts made the mail cheaper than Standard ECR basic letter rates.

The impact of this on Standard ECR mail volume is modeled through a non-linear intervention variable in the Standard ECR demand equation that begins in 2007Q4, the first full quarter after R2006-1 was implemented. As with Standard Regular Mail, the impact of this variable is allocated to all types of Standard ECR Mail on sheet 'Volume' of ExigentImpact.xlsx. It is likely, however, that the full impact of this change would probably have been on Standard ECR Basic Mail only, not on High-Density or Saturation Mail.

The impact of this variable on Standard ECR mail is quantified in column X of sheet 'Volume' of ExigentImpact.xlsx starting at FY 2007. The combined effect of this variable on total Standard ECR Mail volume in FY 2008 (Basic, row 141; High-Density/Saturation Letters, row 154; and High-Density/Saturation Non-Letters, row 167) was a reduction in volume of 1.81 billion pieces of Standard ECR Mail volume. Of this total, 1.09 billion is attributed to High-Density and Saturation Mail on sheet 'Volume' of ExigentImpact.xlsx. Moving these declines to Standard ECR Basic would offsettingly increase the figure associated with "Other" factors for Standard ECR Basic (cell R141 of sheet 'Volume' of ExigentImpact.xlsx) by the same amount. This would reduce the value in that cell (R141) to −58.5 billion pieces (-0.5 percent). Shifting these effects between the sub-categories of Standard ECR Mail in this way would only affect the results presented in columns R and X of sheet 'Volume' of ExigentImpact.xlsx, and would have no effect on the estimated impact of the Great Recession on Standard Mail volume presented in this case.

12. In response to question 9 (a-b) of POIR No. 1, witness Thress states: "[t]he trend component of the relevant macro-economic variables is calculated dynamically as a function of past, present, and *future* macro-economic levels at every point in time." (emphasis added). However, in response to question 1b of POIR No. 2, Thress states: "[a]s such, it is not literally possible to incorporate any 'forward looking data or input' directly into the Postal Service's econometric demand equations." Please also refer to Library Reference USPS-LR-R2010-4R-10, Sources-of-ChangeCalc.xlsx, tab "Input Data".

a. Please confirm that not only the trend component, but also cyclical component of filtered macro-economic variables (employment, investment and others) presented in tab "InputData" are calculated "as a function of past, present, and future macro-economic levels at every point in time".

b. If part a. is not confirmed, please explain why the cyclical component of filtered macro-economic variables appear to include "future" macro-economic data in columns M, U, Q and Y of tab "InputData" given that they are calculated as raw macro-economic data divided by trend component (which includes "future" data).

c. Please explain why witness Thress filters macro-economic variables by applying "a function of…future macro-economic levels", (see response to POIR No. 1, questions 9 (a-b) while observing that incorporating "forward looking data or input" would induce a circular effect (see response to POIR No. 2, question 1b).

<u>RESPONSE</u>

a. Confirmed.

b. N/A

c. Consumers react differently to long-run and short-run changes in macro-economic conditions. This has been observed empirically by many economists, dating back at least to Milton Friedman's seminal work, *The Theory of the Consumption Function* (1957). Please see my response to POIR No. 1, Question 9, for a discussion of this topic.

To the extent that consumers react to long-run macro-economic conditions, this naturally implies that consumers react, in part, to expected future macro-economic conditions. To some extent, I think this is obvious: when people buy a house, they must think about how likely they are going to be able to pay the mortgage in the future, for example.

Since the future cannot be known with certainty, of course, consumers make these decisions based on expectations of future macro-economic levels. The study of consumer expectations and their relationship to actual data has been studied extensively by economists. The Theory of Rational Expectations suggests that consumer expectations (on average) are an unbiased forecast of actual future macro-economic conditions and are, in fact, functionally equivalent to the optimal forecast of future conditions using all available information. One consequence of this is that the best estimate of consumer expectations regarding future macro-economic conditions is future macro-economic conditions themselves. See, for example, *Rational Expectations and Econometric Practice*, edited by Nobel Laureates Robert J. Lucas and Thomas J. Sargent, U of Minnesota Press, 1981, and "Rational Expectations: Retrospect and Prospect", A Panel Discussion with Michael Lovell, Robert Lucas, Dale Mortensen, Robert Shiller, and Neil Wallace, moderated by Kevin Hoover and Warren Young, Center for the History of Political Economy at Duke University, CHOPE Working Paper No. 2011-10, May 30, 2011.

The decision of whether to use this sort of filtered, forward-looking data or not involves weighing the relative benefit of more accurately modeling the factors which actually influence consumer behavior, including future macro-economic conditions, against the cost of having to model macro-economic conditions today as a function of future macro-economic conditions. In this case, I judged the benefits of a better understanding of mailer behavior and stronger statistical models of mail volumes to outweigh the cost of including explanatory variables that were functions of past, present, and future data.

13. In response to question 4a. of POIR No. 3, witness Thress states: "the trend component of private employment per adult is negative in the period between FY 2002 and FY 2012 because employment (per adult) did not begin to recover from the 2001 recession until late 2003 and experienced fairly tepid growth before beginning to decline again by 2007."

a. Would it be accurate to say that all negative impacts of 2001 recession on mail volumes were completed by 2007-2008?

b. If your response to part a. is not an unqualified affirmative response, please identify and describe the techniques you use to distinguish between the impact of the 2001 recession on mail volumes still exerting an effect in 2008-2012 from similar impacts caused by the Great Recession. As part of your response, please refer to particular tabs and columns in the files provided in your library references where you distinguish between impacts of Great Recession and the impacts caused by the previous recession.

RESPONSE

a. Not necessarily. As discussed in several of my previous responses to POIRs (e.g., POIR No. 1, question 9; POIR No. 3, questions 1, 2, 4, and 6; POIR No. 6, questions 5, 8, 12, 14, 19, 20, and 24; and question 12 of this POIR), temporary or cyclical macro-economic conditions can have lingering long-term implications on consumer behavior and, hence, on long-run trends in both the general macro-economy as well as the demand for specific products (such as the mail). It is certainly possible that the 2001 recession had some such effects. For example, the net mail diversion trends included in the econometric demand equations for First-Class Mail used in this case appear to have increased somewhat in the years immediately following the 2001 recession. Please see my response to POIR No. 6, question 13 for some more discussion of this topic.

b. To the extent that net mail diversion trends were affected by the 2001 recession, this impact would be incorporated into the magnitudes of these variables prior to 2007 and would be picked up in the factors identified in columns H ("Trends") and U ("Diversion") of sheet 'Volume' of ExigentImpact.xlsx, which are not included among those factors that are attributed to the Great Recession in my Further Statement in this case.

In the case of macro-economic variables, the trend component of both Employment and Investment would have been expected to turn (or, in the case of Investment, remain) positive throughout the post-2007 time period had these variables grown at their historical rate throughout this time period.

The macro-economic impacts attributed to the Great Recession in my Further Statement calculate these impacts relative to a baseline of zero macro-economic growth. Given that the expected growth rate of the macro-economic variables used in my analysis (including the trend components of Employment and Investment) would have been positive in the absence of the Great Recession over this time period, any lingering reductions in macro-economic growth rates due to the 2001 recession will not factor into the macro-economic impact of the Great Recession in my Further Statement. That is to say, if the actual trend rate is positive, but would have been slightly higher but for the lingering effects of the 2001 recession, the difference between these two positive trend values is not being attributed to the Great Recession in my analysis, because I am calculating the effects of the Great Recession against an alternative (lower) trend value of zero. Please see my response to POIR No. 3, Question 4 for some additional discussion of this topic.

14. Please refer to Library Reference USPS-R2010-4R-10, ExigentImpact.xlsx, tab "Volume". In response to question 4b of POIR No. 1, witness Thress states: "[t]he distinction between 'Trends' and 'Diversion' in my Table Two is semantic, and mostly (but not completely) boils down to this: "Trends" are positive and "Diversion" is negative. In response to question 5a. of POIR No. 5, clarifying the meaning of data in the column labeled "Rec/Diversion," witness Thress states: "[t]he numbers in column W of sheet 'Volume' of ExigentImpact.xlsx are intended to capture changes to long-run mail trends which are attributable to the Great Recession".

a. Please identify and describe the factors/trends that impacted volume changes shown in column U (labeled "Diversion") and how they are different from factors or trends that resulted in mail volume changes shown in column W (labeled "Rec/Diversion").

b. Please identify and describe the factors/trends that impacted volume changes shown in column V (labeled "Recession") and how they are different from factors or trends that resulted in mail volume changes shown in column W (labeled "Rec/Diversion").

c. Please refer to any spreadsheets or files in the Library References filed in your responses to the current docket that provide the breakdowns of impacts on mail volumes from each factor/trend identified in parts a. and b. above, and summarized in columns V and W (labeled "Rec/Diversion" and "Recession").

d. Please provide a more explicit statement to clarify what you mean by "mostly but not completely boils down to this: 'Trends' are positive and 'Diversion' is negative" in your response to POIR No. 1, question 4b. As part of your response, please describe the exact differences between trends and diversion as used in your spreadsheets and described in the above quote.

e. As an example of your response to part d., please provide your interpretation of the numbers and differences shown in column H labeled "Trends" and in column U labeled "Diversion" using an example of First-Class Workshared Letters.

<u>RESPONSE</u>

a. The mathematical difference between column U and W is in the starting date of the time trend. Time trends included in column U started prior to the Great Recession (generally, before FY 2007), while time trends included in column W start in FY 2007 or later. Please see my response to POIR No. 3, Question 2 for a discussion of the basis for the attribution of the variables in column W to the Great Recession.

b. The mathematical difference between column V and W is that column V includes Intervention variables which attenuate to a constant long-run level, while the variables in column W are on-going trends. Please see my response to POIR No. 3, Question 2 for a discussion of the basis for the attribution of these variables to the Great Recession.

c. Mathematically, the impact of specific Intervention variables or "diversion" trends can be found on sheet 'Interventions' of the spreadsheet Sources-of-ChangeCalcs.xlsx, which was filed with USPS-R2010-4R-10 in this case. It is not possible mathematically to isolate specific sub-trends which may be affecting individual diversion trends (e.g., the separate effects of increased electronic diversion vis-à-vis reduced numbers of credit cards on First-Class single-piece letters volume) and no formal attempt was made to do so.

In some cases, however, it may be possible to infer the impact of specific sub-factors based on data from outside sources. See, for example, my responses to POIR No. 1, questions 4 and 9.

d. The specific variables which are presented in columns H, U, V, and W are described below for each econometric demand equation used in this case.

<u>First-Class Single-Piece letters, cards, and flats</u>

- No variables are included in column H (Trends)
- Time trends starting in 1993Q4 and 2002Q4 are included in column U (Diversion)
- No variables are included in column V (Recession)
- A time trend starting in 2007Q4 is included in column W (Rec/Diversion)

<u>First-Class Workshared letters, cards, and flats</u>

- A logistic time trend (@LOG(TREND-84)) is included in column H (Trends)
- Time trends starting in 2002Q3 and 2004Q1 are included in column U (Diversion)
- No variables are included in column V (Recession)
- A time trend starting in 2008Q1 is included in column W (Rec/Diversion)

<u>First-Class International letters, cards, and flats</u>

- A full-sample time trend (TREND) is included in column H (Trends)
- No variables are included in column U (Diversion)
- No variables are included in column V (Recession)
- No variables are included in column W (Rec/Diversion)

Standard Regular Mail (excluding Parcels)

- A full-sample time trend (TREND) is included in column H (Trends)
- No variables are included in column U (Diversion)
- A non-linear Intervention variable starting in 2008Q2 is included in column V (Recession)
- A time trend starting in 2007Q1 (that exactly offsets the full-sample time trend) is included in column W (Rec/Diversion)

Standard ECR Mail

- A full-sample time trend (TREND) is included in column H (Trends)
- No variables are included in column U (Diversion)
- No variables are included in column V (Recession)
- No variables are included in column W (Rec/Diversion)

Standard Nonprofit Mail

- A full-sample time trend (TREND) is included in column H (Trends)
- No variables are included in column U (Diversion)
- A non-linear Intervention variable starting in 2009Q2 is included in column V (Recession)
- A time trend starting in 2011Q2 is included in column W (Rec/Diversion)

Standard Nonprofit ECR Mail

- A full-sample time trend (TREND) is included in column H (Trends)
- No variables are included in column U (Diversion)
- No variables are included in column V (Recession)
- No variables are included in column W (Rec/Diversion)

Periodicals Mail

- No variables are included in column H (Trends)
- A time trend starting in 1993Q2 is included in column U (Diversion)
- No variables are included in column V (Recession)
- A time trend starting in 2008Q2 is included in column W (Rec/Diversion)

RESPONSE OF THOMAS THRESS
TO PRESIDING OFFICER'S INFORMATION REQUEST NO. 7

Bound Printed Matter

- No variables are included in column H (Trends)
- No variables are included in column U (Diversion)
- A non-linear Intervention variable starting in 2008Q3 is included in column V (Recession)
- No variables are included in column W (Rec/Diversion)

Media and Library Rate Mail

- No variables are included in column H (Trends)
- A time trend starting in 1996Q4 is included in column U (Diversion)
- No variables are included in column V (Recession)
- A time trend starting in 2010Q1 is included in column W (Rec/Diversion)

Postal Penalty Mail

- A full-sample time trend (TREND) is included in column H (Trends)
- No variables are included in column U (Diversion)
- No variables are included in column V (Recession)
- No variables are included in column W (Rec/Diversion)

Free-for-the-Blind Mail

- A full-sample time trend (TREND) is included in column H (Trends)
- No variables are included in column U (Diversion)
- No variables are included in column V (Recession)
- No variables are included in column W (Rec/Diversion)

Postal Penalty Mail and Free-for-the-Blind Mail are combined within a single section of ExigentImpact.xlsx, identified as "Free Mail" (starting at row 303)

Registered Mail

- A full-sample time trend (TREND) is included in column H (Trends)
- A time trend starting in 2001Q3 is included in column U (Diversion)
- No variables are included in column V (Recession)
- No variables are included in column W (Rec/Diversion)

<u>Postal Insurance</u>

- A full-sample time trend (TREND) is included in column H (Trends)
- No variables are included in column U (Diversion)
- No variables are included in column V (Recession)
- No variables are included in column W (Rec/Diversion)

<u>Certified Mail</u>

- No variables are included in column H (Trends)
- No variables are included in column U (Diversion)
- A non-linear Intervention variable starting in 2011Q1 is included in column V (Recession)
- No variables are included in column W (Rec/Diversion)

<u>Return Receipts</u>

- No variables are included in column H (Trends)
- No variables are included in column U (Diversion)
- No variables are included in column V (Recession)
- A time trend starting in 2007Q1 is included in column W (Rec/Diversion)

<u>Money Orders</u>

- No variables are included in column H (Trends)
- Time trends starting in 1996Q4 and 2003Q1 are included in column U (Diversion)
- No variables are included in column V (Recession)
- A time trend starting in 2009Q2 is included in column W (Rec/Diversion)

Please see my response to POIR No. 3, Question 2, for a more detailed discussion of the variables included in columns V (Recession) and W (Rec/Diversion) on sheet 'Volume' of ExigentImpact.xlsx.

e. Please see my response to part d. of this question. Please see also my responses to POIR No. 3, Question 2, and POIR No. 4, Question 1, for a further discussion of the specific factors underlying these variables in the First-Class Workshared letters, cards, and flats equation.

3. On page 10 of Mr. Nickerson's statement, he says: "It is also extremely likely that mail volumes will continue to decline beyond 2014. First-Class Mail volumes have decreased every year since 2001, and there is no reason to believe this trend will change."

a. How much of the decrease in the volume of First-Class Mail from 2001 to 2007 was due to the Great Recession?

b. Please refer to Attachment 15 to the Nickerson statement. How much of the 4.1 billion decline in volume from the 2013 Forecast to the 2014 After Rates Forecast (Jan 26, 2014) would you consider to be due to the Great Recession?

c. If the declining trend in First-Class Mail volume continues beyond 2014, as the Nickerson statement surmises, will any of that further decline in the volume of First-Class Mail be due to the Great Recession?

d. Is it fair to interpret the quoted statement in the preamble to this question as saying that the decline in First-Class Mail volume is unlikely to return to prior levels even when the economy improves because the decline in volume reflects an irreversible trend resulting from diversion of mail to alternatives such as the Internet, pay-by-phone, vote-by-phone for stockholder elections, etc.? If that is not a reasonable interpretation, please explain what was meant by the above-quoted statement.

e. The 4.1 billion decline in volume from 2012 to the 2014 After Rates Forecast (Jan 26, 2014) reflects an average decline of about 2 percent per year. If the volume of mail continues to decline at that pace, is that likely to create a recurring liquidity problem even if the exigent price increase is approved, or can the Postal Service reasonably expect to continue to adjust its labor force and cost structure to accommodate such a decline in mail volume?

a.-d. Answered by Thomas Thress

e. As I discussed in my Statement, while this exigent increase is a very important part of improving the Postal Service's unsustainably low liquidity position, the Postal Service will still have a "liquidity problem" even if this increase is approved. The liquidity problem is better described as continuous and overwhelming, rather than recurring. In particular, my Statement noted that if the Postal Service implements this increase along with the CPI increase, and continues to default on its legally-mandated RHB payment obligation, it expects its available liquidity to be $4.161 billion, or 15 days, by the end of 2014, which remains well below the level of cash that a financially sound private sector company would have. A truly healthy liquidity position will only be achieved through modifications to the current legal environment in which the Postal Service operates, combined with additional revenues. To the extent that future volume declines are likely going forward, the Postal Service expects that it will be able to continue to reduce associated volume variable costs within its control. However, the effects on liquidity of volume declines, combined with limitations on the Postal Service's ability to adjust its cost structure due to factors beyond its control, will inevitably increase the pressures on liquidity. This combination of factors further underscores the need for the exigent increase.

4. For the five Standard Mail products listed below, the FY 2009 and FY 2010 Revenue, Pieces, and Weight System (RPW) Reports posted on the Postal Service's web site show different volume figures for FY 2009. (In the FY 2010 RPW Report, the volume data for FY 2009 appear in the column for the preceding year.)

	(1) As shown in FY 2009 RPW (000's)	(2) As shown in FY 2010 RPW (000's)
HD & Sat. Letters	5,085,391	4,995,529
HD & Sat. Flats	12,356,828	11,801,047
Carrier Route	9,856,763	9,953,347
Letters	46,559,408	46,800,733
Flats	7,793,175	7,837,100

a. Please explain the discrepancy between columns 1 and 2, and state which are the correct volume data for FY 2009.

b. For FY 2009, please explain which of the above volume data were used by witness Thress for his analysis of Standard Mail.

RESPONSE:

a. The two columns represent two different estimates of FY2009 volume, based on two different estimation methodologies for Non-PostalOne offices. The original FY 2009 estimate (from the FY2009 RPW) used Panel data to estimate volume in Non-PostalOne offices. In FY2010, the methodology for Non-PostalOne offices was changed to impute volume using stratification based on data from PostalOne offices. This change in RPW methodology was proposed by the Postal Service as Proposal Two in Docket No. RM2009-7, and approved by the Commission in Order No. 354. The FY2010 RWP reported FY2010 volume using the new methodology. For purposes of making an apples-to-apples SPLY comparison, the FY2010 RPW also reported a new estimate of FY2009 volume, based on the same new methodology which generated the FY2010 estimate. That new estimate of

FY2009 volume, using the new FY2010 methodology, appears in the second of the two columns presented in the question. The new methodology was adopted to improve the estimates, so the second column (the SPLY column from the FY2010 RPW) is viewed as the better set of estimates of FY2009 volumes.

b. Answered by Thomas Thress.